Bay Engineering Inc.
Engineers, Planners and Surveyors

March 30, 2015

City of Annapolis
Department of Neighborhood & Environment Programs
145 Gorman Street, 3rd Floor
Annapolis, MD 21401

Attn: Frank Biba, Chief of Env. Programs

Re: Forest Conservation Plan Resubmittal
Annapolis Townes at Neal Farm
FCP 2014-002

Dear Mr. Biba,

The following is a point – by- point response to your comment letter dated January 16, 2015 (copy attached). It should be noted that since we received the comments we have had several meetings in the field with staff and have subsequently modified the site plan to respond to the City comments.

Response 1A: As discussed and agreed with DNEP the FEMA reduction in the Tract area will be removed since a floodplain study will note be reviewed by MDE. Additionally the FCE has been revised to include this area within the preserved easement area.

Response 1B: The Forest Conservation worksheet has been revised accordingly to assume a 50% tree mortality within 15 feet of the LOD. The area along the pipe and step pools has been added as requested.

Response 1C: The legend has been revised to clarify the shaded steep slopes as 15% and greater.

Response 2:

- Colors have been added to Legend and plans as requested.
- Contour labels have been added.
- All trees 24" and greater within 15' of LOD have been shown.
- The path alignment will be finalized in the field.
- The path alignment will be located to minimize any tree disturbance.

Response 3: Aerial Plan added to FCP as Sheet 3.

Response 4: We acknowledge your statement.

Response 5: All specimen trees on the site have been identified. No state champion trees of specific species were present on the site.

Response 6: Based on several site visits with yourself and our forest arborist, we have addressed all of your comments with the revised plans. A Tree Protection Action Key (TPAK) by Chris Cowles of WSSI is attached summarizing the field discussions.

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Response 7: We acknowledge your statement.

Response 8: See Response #6 above.

Response 9: See Response #6 above.

Response 10: See Response #6 above.

Response 11: Refer to the attached forest clearing justification.

Response 12: As we have previously discussed, the applicant and their consultant are no longer interested in changing the approved FSD for this project. Any trees/stands condition rating is hereby formally withdrawn.

Response 13: A variance request to remove Specimen Tree #22 and #91 has been included in this resubmittal package.

Response 14: A 50% canopy coverage analysis has been provided on Sheet 2 of the FCP. This project will not have any issues meeting this City goal.

Response 15(a): A vegetative buffer plan has been provided with the Site Development Plans Sheet C11-C14 as requested.

Response 15(b): The supplemental tree planting along the forest edge will be provided at the grading permit stage.

Response 15(c): The mitigation plan per City Code Section 17.09.070 will be provided at grading permit stage.

Response 16: Additional Notes, tree protection fencing and sediment controls have been added to FCP Sheet 8 as requested.

Response 17: A detailed invasive exotic plants control and tree management plan will be provided at the grading permit stage.

STORMWATER MANAGEMENT

COMPUTATIONS:

Response 1: A small 'D' soils area is located in the northeastern corner of the site (WBA soil per Sheet C4).

Response 2: Since the Step Pool Conveyance cannot be considered a micro-practice it will not be used for quality control, but quantity control only. Micro-practices have been used on-site to the maximum extent practical. Alternative micro-practices in the form of Filterra Boxes are even being used to reduce or eliminate the need for quantity control storage.

Channel Protection Volume has now been calculated for the site and we are proposing two structural quantity control measures on-site; the step pool conveyance system and a storage trench. More detailed calculations for these devices will be provided at the final design phase, pages 104 and 105 and the stormwater management report shows the storage volumes provided by these devices and sheet 5 of the report shows the total required and proposed storage.

Response 3: The enhanced filter is no longer being used for this micro-bioretention and has been removed from the calculations. Also, only the maximum allowable storage for the 1-year runoff is accredited for the ESD volume calculations.

Response 4: The comment is acknowledged that there is an increased flow to the step pool conveyance system. Please note that a storage trench has now been included along the storm drain system that discharges to the proposed step pool conveyance system. The storage trench will be routed through TR-20 during the final design phase to show the reduced runoff to the proposed step pool conveyance system. Also the step pool conveyance system is sized and designed based on the ultimate develop to the system so it will remain stable during the calculated increased flows.

PLANS

Response 1: The pipe alignment has been revised per our site visits/meetings with DNEP.

Response 2: The pipe alignment has been revised per our site visits/meetings with DNEP. An impenetrable geotextile membrane will be added along the wall as previously discussed. Details to be provided at final/permitting stage.

Response 3: MB-2 has been revised per our meetings and site visits.

Response 4: Maintenance will be provided via path between units and a drop over the wall or alternately at the low side of the retaining wall to the north via the SPSC access road.

Response 5: The grading has been revised accordingly.

PLANNING & ZONING

Response 1: The outfall design and layout has been adjusted per meetings and site visits with City staff. The revised submittal we feel respects the existing environmental features and is good design for an adequate outfall to proposed project.

Response 2: With the Site Development Plan the applicant has studied the buffer and provided a detailed buffer screening plan/details to address your concerns.

Response 3: The revised plan reflects a site layout and proposal to provide 2.5 spaces per unit which exceeds the code requirement. See response 2 above addressing the screening concerns.

I trust that the enclosed FCP and supporting documentation will be forwarded to the appropriate agencies for review and approval. If you should have any questions or comments, please do not hesitate to contact me at 410-897-9290.

Sincerely,
Bay Engineering, Inc.

Terry Schuman, P.E.

cc: Bruce Harvey – Williamsburg Group
Don Taylor – DW Taylor
Eliot Powell – Whitehall Development
Mike Klebasko – WSSI

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City of Annapolis
DEPARTMENT OF NEIGHBORHOOD & ENVIRONMENTAL PROGRAMS
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Chartered 1708

January 16, 2015

Terry Schuman, P. E.
Bay Engineering, Inc.
2661 Riva Road, Building 800
Annapolis, MD 21401

RE: Review of the December 5, 2014 Forest Conservation Plan (FCP), Annapolis Townes at Neal Farm,

Mr. Schuman,

Below are our comments on the 12/05/2014 Forest Conservation Plan for Annapolis Townes at Neal Farm:

1. Sheet one:

a. Forest Conservation Worksheet: Item B: Deductions (FEMA Floodplain) 0.44. If MDE is reviewing the floodplain area it can be deducted from the Total Tract Area. If MDE is not reviewing the flood plain area than it will need to be included in the Net Tract Area.
b. Forest Conservation Worksheet: As noted in prior correspondence, assume 50 % tree mortality within 15' of the LOD and adjust the worksheet accordingly. Please include the area between the storm drain pipe (going down the slope) and the mulch access path.
c. Site Legend: Existing Steep Slopes. What percentage of steep slopes does this refer to?

2. Sheet two through five:

Please use colors that are clearly legible to indicate the 15% to 25% existing slopes and the greater than 25% existing slopes.

Please show existing and proposed grades more clearly within the entire limit of disturbance (LOD) and on adjacent sites. Please label each contour line clearly on sheet two through five.

Show all trees 24" and greater within 15' of the LOD even if on an adjacent property.

Show the entire proposed 6' wide upper walking path in green so that it is clear which trees may need to be removed.

3. As noted in prior correspondence, please overlay the proposed development plan on an aerial photo (taken in the winter if possible) of the property. Please include a 24" by 36" sheet (color copy) with the next FCP application

4. Natural Resources Article §5-1607 (c) outlines priority areas for retention and protection:
(1) (i): Trees, shrubs, and plants located in sensitive areas including intermittent and perennial streams and their buffers, and steep slopes.

(ii): Contiguous forest.
(2) (ii) Trees having a diameter, measured at 4.5 feet above the ground of:
1. 30 inches; or
2. 75% of the diameter, measured at 4.5 feet above the ground of the current State Champion Tree of that species as designated by the Department.

An intermittent stream exists on the site. The intermittent stream and its buffer are a Priority Area for Retention and Protection.

Extensive forested steep slopes (15% and greater) exist on the site. The forested steep slopes are a Priority Area for Retention and Protection.

All on site forest, because it is part of a contiguous forest, has been designated as a Priority Area for Retention and Protection and is ranked as a Priority 1 Stand in the approved Forest Stand Delineation.

Trees 30 inches in diameter or greater exist on the site. These trees are a Priority for Retention and Protection and require a variance for removal.

Please indicate if trees 75% of the diameter, measured at 4.5 feet above the ground of the current State Champion Tree of that species as designated by the Department exist on site.

The proposed LOD, particularly the step pool conveyance system, units 37-50, the two micro-bioretention areas, the 10' step pool access path, the 6' and 4'walking paths, the storm drain pipes, and the 6' retaining wall, significantly encroaches on the existing forested steep slopes, forested slope buffer, and specimen tree 108, and disturbs the intermittent stream buffer.

The State Forest Conservation Technical Manual (Manual), Third Edition, 1997, op page 3-21, section 3.2.1 provides guidance on protection of contiguous forest through planning:

a. Minimize habitat fragmentation by developing or disturbing existing edges, and restricting creation of new edges or openings.
b. Minimize fragmentation by retaining continuous canopy and understory cover.

The impacted forest on and adjacent to steep slopes has almost a 100% canopy closure. The proposed LOD will open up the canopy in existing forested areas and will more than likely cause significant degradation of the surrounding forest and affected steep slopes.

Move the LOD outside of the 25' steep slope buffer (shown on sheet two through sheet five) to preserve the existing contiguous forest and the existing forested steep slopes and move the LOD to preserve specimen tree 108 and the intermittent stream buffer.

The Forest Conservation allows incursion into Priority Areas for Retention and Protection if it can be demonstrated by the applicant that reasonable efforts have been made to protect them and the plan cannot reasonably be altered.

Please provide a detailed demonstration as required by Natural Resources Article §5-1607 (c) (page 14 and 15) and the State Forest Conservation Technical Manual, Third Edition, 1997 (page 3-5/6, section 3.1.1) if any area listed under item 1 and 2 and item 1 through 3 respectively is within the LOD. Please answer the specific questions.

3. Comments pertaining to the November 19, 2014 letter from Mr. Klebasco pertaining to the forest at the Annapolis Townes at Neal Farm site:
In order to change the condition rating of existing trees and forest stands the approved Forest Stand Delineation (FSD) will need to be revised. Please submit an amendment to the approved FSD for review.

Klebasco Environmental, LLC prepared a FSD report dated April 19, 2013 and FSD plan dated October 31, 2012. Please explain what changed in tree and forest conditions from these dates to November 18, 2014 to warrant a change in the condition rating of several existing trees and forest stands.

4. Please submit a variance for the removal of any tree associated with an historic structure, a Champion Tree, a tree with a diameter which is 75% of the State Champion of that species, or a tree 30" or larger with the next FCP application.

5. Please show how a 50% canopy will be achieved on the site by 2036. Please include documentation with the next FCP application.

6. Grading permit phase: please submit a landscape plan that will show the following:
   a. a vegetative buffer along adjacent properties that includes numerous trees.
   b. supplemental tree planting along the forest edge to aid in invasive species control of adjacent forest as well as supplemental tree planting in open spots in the existing forest.
   c. mitigation according to City Code section 17.09.070 for the removal of any tree 24" in diameter or greater.

7. Grading permit phase, sheet six and seven: All tree protection fencing shall be 4' high chain link fence with round metal posts at least every 10'. In areas were root pruning will take place super silt fence may be used as tree protection fencing if installed in the root prune trench. Please use filter log (12" minimum) with 4' high chain link fence as tree protection instead of super silt fence in the critical root zone of existing trees if no root pruning will be done and with the approval of the Sediment and Erosion Control Inspector. Change the tree protection fence detail on sheet six and section three and four on sheet seven accordingly.

8. Grading permit phase: submit a detailed invasive exotic plants control plan and tree management plan for implementation during the entire construction process and for five years after completion of the entire project. Semi-annual updates will need to be submitted to the City's Environmentalist in April and October.

Stormwater Management:

Computations:

1. On p. 12 and pl. 13, the computations show HSG D soil types for 38,003 SF. Where is this located? Using Web Soil Survey, it appears that the HSG is only C for this project.

2. On p. 14, the Step Pool Conveyance is indicated to be providing ESDv or 3,069 CF. Step Pool Conveyances are considered to be structural practices for stormwater management. The ESD target is not met with the ESD practices so additional management is required. A quick check of the numbers provided indicates that the volume of runoff to be treated with the step pool conveyance is 3,610 CF to meet the ESD goals. It is acknowledged that this is a final design procedure and these plans are conceptual, but the increased sizing for the step pool conveyance will impact a wooded area.

3. On p. 21, the micro-bioretention total combined storage is showing an enhanced filter. No additional computations were provided for this part of the practice. Additionally, the ESDv max for this area is 1081.60

CF which is less than the 1488.50 CF being provided by the ponding and media storage. The enhanced filter cannot be credited here.

4. The proposed TR-55 shows a flow rate that is more than double the existing for the 10 year event. Will the step pool conveyance be able to handle this increase flow and remain stabilized? This could cause the toe of the slope to be unstable.

Plans:

1. The pipe directing runoff to the step pool conveyance will not be easily accessible to repair if there is an issue with the pipe because it is not adjacent to the access path.

2. Micro bioretention area 2 is adjacent to a retaining wall that appears to be 6.5 feet in one area. This might be problematic for the retaining wall foundation with the invert of the MB-2 being 5.17 feet from the surface.

3. MB-2 is located close to a steep slope. Please confirm the capture runoff will not be seeping through the slope and cause slope failure.

4. Please provide information on how maintenance of the MB-2 is to occur and how access to MB-2 is obtained.

5. The permeable pavement appears to be receiving runoff from the adjacent areas.

Planning and Zoning:

1. P&Z prior comment #5 regarding the proposed SWM step pool system remains. The revised proposal does not adequately protect large specimen trees on the steep slopes nor at the bottom of the slope. The proposed design includes disturbance within the intermittent stream buffer. The outfall, grading, piping and access path should better respect these sensitive environmental features.

2. P&Z prior comment #7 regarding inadequate property boundary buffers remains. Proposed planting buffers of 5 - 12 feet are simply too narrow to support mature canopy and evergreen tree species.

3. P&Z prior comment #9 regarding a lack of guest parking remains, primarily because of proposed guest parking in the buffer areas which may be removed to provide adequate planting space.

Please contact me if you have any questions.

Sincerely,

Frank Biba, AICP, LEED AP
Chief, Environmental Programs

cc: Maria Broadbent
Jan Van Zutphen
Matthew Waters
Thomas Smith

Date: March 2015

Tree Protection Action Key

Project: Annapolis Townes at Neal Farm

Tree #	DBH (Diameter at 4.5 feet above grade)	Common Name	Botanical Name	Condition Rating %	Condition Rating	Number of Stems	SCRZ Structural Critical Root Zone (radius) in Feet	CRZ Critical Root Zone Radius in Ft (1.5 ft radius/in DBH)	Removal by Site Work	Removal (Selective) By Arborist	Recommended Preservation Measures: Root Prune, Mechanical	Tree Protection Fence, WWF or SSF	Mulch Band	Year 1 Soil Care	Tree Condition Inspections	Construction Oversight/Monitoring	Support Cable	Crown Prune	Protection Recommendations	Additional Site Assessment Notes	Healt/ Condition Issues / Defects
74	28	tuliptree	Liriodendron tulipifera	50	Fair	1	10.0	42			X	X								trunk scar	Narrow Crown,
78	14	tuliptree	Liriodendron tulipifera	50	Fair	1	7.0	21			X	X									Narrow Crown,
87	29	tuliptree	Liriodendron tulipifera	50	Fair	1	10.0	44			X	X	X					X	PRUNE FOR HOUSE CLEARANCE AS NEEDED.		Full Crown, Large DW (3"+), Branch Decay, Broken Limbs, Weak Union,
88	18	maple, red	Acer rubrum	38	Poor	1	8.0	27	X												Narrow Crown, One Sided, Suppressed, Stressed, Excessive Lean,
91	33	sweetgum	Liquidambar styraciflua	20	Critical	1	10.0	50		X									LEAVE STUMP OUTSIDE LOD		Narrow Crown, Trunk Decay, Basal Decay,
96	38	tuliptree	Liriodendron tulipifera	50	Fair	1	11.0	57			X	X									Narrow Crown,
106	23	oak, white	Quercus alba	75	Good	1	9.0	35				X			X				NO SILT FENCE		Full Crown,
108	35	sycamore, American	Platanus occidentalis	50	Fair	2	10.0	53				X			X				NON-INVASIVE SILT FENCE.	near stream in bottom.	Narrow Crown, One Sided,
118	17	hickory, mockernut	Carya tomentosa	75	Good	1	8.0	26				X			X						Full Crown,
124	15	cherry, black	Prunus serotina	43	Poor	1	8.0	23			X	X									Narrow Crown, Suppressed, Vines,
129	26	tuliptree	Liriodendron tulipifera	54	Fair	1	10.0	39			X	X	X	X	X			X	CONSIDER REMOVE AND REPLACE AT PRE-CON WALK.		Full Crown, Large DW (3"+), Branch Decay, Broken Limbs,
130	24	cherry, black	Prunus serotina	43	Poor	1	10.0	36		X									LEAVE STUMP OUTSIDE LOD		Narrow Crown, Large DW (3"+), Trunk Decay, Branch Decay, Broken Limbs,
141	7	tree of heaven	ailanthus altissima	25	Critical	1	4.0	11	X												Narrow Crown,
142	7	tree of heaven	ailanthus altissima	25	Critical	1	4.0	11				X							OPTIONAL SELECTIVE REMOVALS- STUMP CUT AND TREAT FOR REGROWTH.		Narrow Crown,
143	7	tree of heaven	ailanthus altissima	25	Critical	1	4.0	11				X							OPTIONAL SELECTIVE REMOVALS- STUMP CUT AND TREAT FOR REGROWTH.		Narrow Crown,
144	7	tree of heaven	ailanthus altissima	25	Critical	1	4.0	11				X							OPTIONAL SELECTIVE REMOVALS- STUMP CUT AND TREAT FOR REGROWTH.		Narrow Crown,
149	26	tuliptree	Liriodendron tulipifera	50	Fair	1	10.0	39	X												Narrow Crown,

Wetland Studies and Solutions, Inc. a DAVEY company

Date: March 2015

Tree Protection Action Key

Project: Annapolis Townes at Neal Farm

Tree #	DBH (Diameter at 4.5 feet above grade)	Common Name	Botanical Name	Condition Rating %	Condition Rating	Number of Stems	SCRZ Structural Critical Root Zone (radius) in Feet	CRZ Critical Root Zone Radius in Ft (1.5 ft radius/in DBH)	Removal by Site Work	Removal (Selective) By Arborist	Recommended Preservation Measures: Root Prune, Mechanical	Tree Protection Fence, WWF or SSF	Mulch Band	Year 1 Soil Care	Tree Condition Inspections	Construction Oversight/Monitoring	Support Cable	Crown Prune	Protection Recommendations	Additional Site Assessment Notes	Healt/ Condition Issues / Defects
150	16	tuliptree	Liriodendron tulipifera	50	Fair	1	8.0	24	X												Narrow Crown, Suppressed, Vines,
151	16	tuliptree	Liriodendron tulipifera	50	Fair	1	8.0	24	X												Narrow Crown,
154	23	tuliptree	Liriodendron tulipifera	43	Poor	1	9.0	35	X												Narrow Crown,
187	20	tuliptree	Liriodendron tulipifera	43	Poor	1	9.0	30			X	X							OPTIONAL SELECTIVE REMOVAL- LEAVE STUMP.		Narrow Crown, Basal Decay, Broken Limbs,
189	26	oak, northern red	quercus rubra	50	Fair	1	10.0	39			X	X									Narrow Crown,
201	9	beech,american	Fagus grandifolia	75	Good	1	5.0	14		X									LEAVE STUMP OUTSIDE LOD		Narrow Crown,
202	20	tuliptree	Liriodendron tulipifera	50	Fair	1	9.0	30	X										REPLACEMENT NEEDED		Narrow Crown,
203	21	tuliptree	Liriodendron tulipifera	46	Poor	2	9.0	32			X	X							OPTIONAL SUPPORT CABLE		Narrow Crown, Basal Decay,
204	17	tuliptree	Liriodendron tulipifera	50	Fair	1	8.0	26			X	X									Narrow Crown,
205	22	tuliptree	Liriodendron tulipifera	50	Fair	1	9.0	33			X	X									Narrow Crown,
206	19	tuliptree	Liriodendron tulipifera	50	Fair	1	9.0	29			X	X									Narrow Crown,
276	16	tuliptree	Liriodendron tulipifera	50	Fair	1	8.0	24			X	X									Narrow Crown, Suppressed,